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AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Previously Presented) A method of forming a bump comprising the steps of:

forming a resist layer to have a through-hole located over a pad, the resist layer having an inner surface to define the through-hole, the inner surface having a portion projecting inwardly in the through-hole; and

forming a metal post on the pad conforming to the shape of the through-hole so as to have a side surface having a recess formed therein.

2. (Cancelled)

3. (Previously Presented) A method of forming a bump comprising the steps of:

forming a resist layer to have a through-hole located over a pad, the through-hole having a ring shape so that part of the resist layer remains at a center of the through-hole; and

forming a metal post on the pad conforming to a shape of the through-hole so that the metal post is not higher than the resist layer and the metal post has a hole exposing the pad.

4. (Currently Amended) A method of forming a bump comprising the steps of:

(a) forming a resist layer to have through-holes located over a pad;
and

(b) forming metal posts on the pad conforming to a shape of the through-holes so as to have a space between the metal posts for receiving a soldering or brazing material; and

(c) removing the resist layer which shapes the metal posts after step (b) so as to form a space between the metal posts.

5. (Previously Presented) The method of forming a bump according to claim 1,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists ,
and the second metal post is formed on the first metal post.

6. (Previously Presented) The method of forming a bump according to claim 1,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists,

and

after removing the resist layer, the second metal post is formed so as to cover a surface of the first metal post.

7. (Previously Presented) The method of forming a bump according to claim 5, wherein the pad is covered with an insulating film, the resist layer is formed on the insulating film, an opening for exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and the first metal post is formed on the pad while the resist layer exists.

8. (Previously Presented) The method of forming a bump according to claim 6, wherein the pad is covered with an insulating film, the resist layer is formed on the insulating film, an opening exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and the first metal post is formed on the pad while the resist layer exists.

9. (Previously Presented) The method of forming a bump according to claim 5, wherein the first and second metal posts are formed by electroless plating.

10. (Previously Presented) The method of forming a bump according to claim 6,
wherein the first and second metal posts are formed by electroless plating.

11. (Previously Presented) The method of forming a bump according to claim 5,
wherein the first metal post is formed of a material containing nickel.

12. (Previously Presented) The method of forming a bump according to claim 6,
wherein the first metal post is formed of a material containing nickel.

13. (Previously Presented) The method of forming a bump according to claim 5,
wherein the second metal post is formed of a material containing gold.

14. (Previously Presented) The method of forming a bump according to claim 6,

wherein the second metal post is formed of a material containing gold.

15. (Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

bonding a plurality of metal posts to a plurality of leads through a soldering or brazing material, each of the metal posts formed on each of a plurality of pads of a semiconductor chip, each of the metal posts having a first end formed adjacent the pad and a second end spaced apart from and opposite the first end, each of the metal posts including a side surface in which is formed a recess extending from the first end to the second end for receiving the soldering or brazing material,

wherein the soldering or brazing material, when melted, is allowed to flow into the recess of each of the metal posts for receiving the soldering or brazing material so as not to spread onto an adjacent pad of the plurality of pads.

16. (Cancelled)

17. (Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

bonding a plurality of metal posts to a plurality of leads through a soldering or brazing material, each of the metal posts formed on one of a plurality of pads of a semiconductor chip and, each of the metal posts having a hole

exposing the pad, the hole penetrating each of the metal posts vertically from the pad without penetrating each of the metal posts horizontally to the pad,

wherein the soldering or brazing material, when melted, is allowed to flow into the hole of each of the metal posts for receiving the soldering or brazing material so as not to spread onto an adjacent pad of the plurality of pads.

18– 29. (Cancelled).

30. (Previously Presented) The method of forming a bump according to claim 3,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists, and the second metal post is formed on the first metal post.

31. (Previously Presented) The method of forming a bump according to claim 3,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists,

and

after removing the resist layer, the second metal post is formed so as to cover a surface of the first metal post.

32. (Previously Presented) The method of forming a bump according to claim 30,

wherein the pad is covered with an insulating film,
the resist layer is formed on the insulating film,
an opening for exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and
the first metal post is formed on the pad while the resist layer exists.

33. (Previously Presented) The method of forming a bump according to claim 31,

wherein the pad is covered with an insulating film,
the resist layer is formed on the insulating film,
an opening exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and
the first metal post is formed on the pad while the resist layer exists.

34. (Previously Presented) The method of forming a bump according to claim 30,

wherein the first and second metal posts are formed by electroless plating.

35. (Previously Presented) The method of forming a bump according to claim 31,
wherein the first and second metal posts are formed by electroless plating.

36. (Previously Presented) The method of forming a bump according to claim 30,
wherein the first metal post is formed of a material containing nickel.

37. (Previously Presented) The method of forming a bump according to claim 31,
wherein the first metal post is formed of a material containing nickel.

38. (Previously Presented) The method of forming a bump according to claim 30,
wherein the second metal post is formed of a material containing gold.

39. (Previously Presented) The method of forming a bump according to claim 31,

wherein the second metal post is formed of a material containing gold.

40. (Previously Presented) The method of forming a bump according to claim 4,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists, and the second metal post is formed on the first metal post.

41. (Previously Presented) The method of forming a bump according to claim 4,

wherein the metal post comprises first and second metal posts,

wherein the first metal post is formed while the resist layer exists,

and

after removing the resist layer, the second metal post is formed so as to cover a surface of the first metal post.

42. (Previously Presented) The method of forming a bump according to claim 40,

wherein the pad is covered with an insulating film,

the resist layer is formed on the insulating film,

an opening for exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and

the first metal post is formed on the pad while the resist layer exists.

43. (Previously Presented) The method of forming a bump according to claim 41,

wherein the pad is covered with an insulating film,

the resist layer is formed on the insulating film,

an opening exposing at least part of the pad is formed in the insulating film after forming the through-hole in the resist layer, and

the first metal post is formed on the pad while the resist layer exists.

44. (Previously Presented) The method of forming a bump according to claim 40,

wherein the first and second metal posts are formed by electroless plating.

45. (Previously Presented) The method of forming a bump according to claim 41,

wherein the first and second metal posts are formed by electroless plating.

46. (Previously Presented) The method of forming a bump according to claim 40,
wherein the first metal post is formed of a material containing nickel.

47. (Previously Presented) The method of forming a bump according to claim 41,
wherein the first metal post is formed of a material containing nickel.

48. (Previously Presented) The method of forming a bump according to claim 40,
wherein the second metal post is formed of a material containing gold.

49. (Previously Presented) The method of forming a bump according to claim 41,
wherein the second metal post is formed of a material containing gold.